

Application No.: 09/588,242

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REMARKS/ARGUMENTS

In a Final Office Action mailed April 13, 2004, claims 1 and 3-38 were rejected. Claims 9, 12 and 20 have been amended. Claim 11 has been canceled. Claims 1, 3-10 and 12-38 remain pending. Applicants request reconsideration of the pending claims in view of the present amendment and following remarks.

I. Claim Rejections – 35 USC 112

The Examiner rejected claims 17-19 under 35 U.S.C., first paragraph. The Examiner asserts, “[t]here does not appear to be any specific recitation supporting the claim features regarding earlier and later time stamps.”

Applicants assert that support for claims 17-19 can be found in line 16, page 10 – line 1, page 11 and Figure 5 of the specification. For example, line 21, page 10 – line 1, page 11 states, “[t]he disk can be then recreated to a time end 509 by taking the snapshot of the disk 501 and performing the data writes 507 to the sectors 505 that exist between time zero and time N.” Thus, “time N” and “time zero” correspond to “a given time” and “a point in time earlier than the given time,” respectively, recited in claim 17. Figure 5 depicts that log entry 511 includes time 503 (a time stamp), sector 505, and data 507.

II. Claim Rejections – 35 USC 102**A. Claims 1, 3, 5-13, 20-23, 25, 27-33, and 35-37**

In the Final Office Action, the Examiner maintained the rejection of claims 1, 3, 5-13, 20-23, 25, 27-33, and 35-37 under 35 USC 102(e) as being anticipated by US Patent No. 6,180,063 (the Golding reference).

1. Claim 1

As noted by Applicants in Applicants’ earlier Response, claim 1 recites, in part, “the circuit queues log entries and periodically sends one or more of the queued log entries to the storage.” Applicants further note that the antecedent basis for “the circuit” is “a circuit for

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associating a mass storage write commands with the time information to create a log entry.” Thus, as recited in claim 1, the same circuit that creates the log entry also queues the log entries.

In contrast, in the Golding reference, as depicted in FIGURE 1, the write messages are created by processor A, but are queued in logs on disks 20 and 30. Thus, Applicants assert that the Golding reference does not anticipate claim 1.

2. Claims 3 and 5-8

Applicants assert that claims 3, 5-8 are allowable for at least the reason that they depend from an allowable independent claim.

3. Claim 9

By this amendment, claim 9 has been amended to recite that a log entry is formed and log entries are queued at a log-assisted disk. Claim 9 has also been amended to recite, in part, that log entries are written from the log queue into a log file in a local mass storage different from the mass storage to be backed up.

In contrast, as discussed above with regard to claim 1, in the Golding reference, the write messages are created by processor A, but are queued in logs on disks 20 and 30. Therefore, Applicants assert that the Golding reference does not anticipate claim 9.

4. Claims 10-13

Claim 11 has been canceled. Applicants assert that claims 10, 12 and 13 are allowable for at least the reason that they depend from an allowable independent claim.

5. Claim 20

By this amendment, claim 20 has been amended to recite that a log entry is formed and log entries are queued at a log-assisted disk. Claim 20 has also been amended to recite, in part, that log entries are written from the log queue into a log file in a mass storage different from the mass storage to be backed up.

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In contrast, as discussed above with regard to claim 1, in the Golding reference, the write messages are created by processor A, but are queued in logs on disks 20 and 30. Therefore, Applicants assert that the Golding reference does not anticipate claim 20.

6. Claim 21

Claim 21 recites, in part, a log-assisted disk that creates a log entry and queues log entries in a log queue. Claim 21 also recites, in part, that log entries are written from the log queue into a log file in a mass storage different from the mass storage to be backed up.

In contrast, as discussed above with regard to claim 1, in the Golding reference, the write messages are created by processor A, but are queued in logs on disks 20 and 30. Therefore, Applicants assert that the Golding reference does not anticipate claim 21.

7. Claims 22-23, 25, 27-32

Applicants assert that claims 22-23, 25, 27-32 are allowable for at least the reason that they depend from an allowable independent claim.

8. Claim 33

Claim 33 recites, in part, that a log entry is formed and log entries are queued at a log-assisted disk. Claim 33 also recites, in part, "communicating the log entries to a mass storage system" and "storing the log entries in a log file at the mass storage system."

In contrast, as discussed above with regard to claim 1, in the Golding reference, the write messages are created by processor A, but are queued in logs on disks 20 and 30. Therefore, Applicants assert that the Golding reference does not anticipate claim 33.

9. Claims 35-37

Applicants assert that claims 35-37 are allowable for at least the reason that they depend from an allowable independent claim.

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B. Claim 17

Claim 17 was rejected under 35 USC 102(b) as being anticipated by US Patent 5,008,786 (the Thatte reference).

Applicants assert that not only does the Thatte reference fail to disclose claim 17, it teaches away. In particular, as set forth in the Abstract, the Thatte reference discloses taking periodic checkpoints, and when a system failure occurs, rolling the system back to the checkpointed state. A portion of the section cited by the Examiner, column 17, lines 30-33 states, “[t]hen the state of the machine is rolled back to the state corresponding to the last checkpoint by restoring the processor registers from the snapshot object.” Note, with reference to Fig. 8, the step of restoring the processor registers from the snapshot object, which corresponds to “RESTORE THE SNAPSHOT” in Fig. 8, takes place moving back in time from the system crash to the time of the checkpoint.

In contrast, claim 17 recites, in part, “writing the log entries having timestamps later than the point in time of the snapshot to the storage device.” Therefore, Applicants assert that the Thatte reference does not anticipate claim 17.

III. Claim Rejections – 35 USC103**A. Claims 4 and 26**

Claims 4 and 26 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Golding reference. Applicants assert that claims 4 and 26 are allowable for at least the reason that they depend from allowable independent claims.

B. Claim 14

Claim 14 was rejected under 35 USC 103(a) as being unpatentable over the Golding reference and US Patent No. 5,943,672 (the Yoshida reference).

Claim 14 ultimately depends from independent claim 9. In contrast to the Examiner’s assertion, for the reasons set forth above for claim 9, Applicants assert that the Golding reference does not teach all other limitations of claim 9. Therefore, Applicants assert that the combination of the Golding reference and Yoshida reference does not make obvious claim 14.

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C. Claims 15 and 34

Claims 15 and 34 were rejected under 35 USC 103(a) as being unpatentable over the Golding reference and US Patent No. 6,182,198 (the Hubris reference).

Claims 15 and 34 depend from independent claims 9 and 33, respectively. In contrast to the Examiner's assertion, for the reasons set forth above for claims 9 and 33, Applicants assert that the Golding reference does not teach all other limitations of claims 9 and 33. Therefore, Applicants assert that the combination of the Golding reference and Hubris reference does not make obvious claims 15 and 34.

D. Claims 16 and 38

Claims 16 and 38 were rejected under 35 USC 103(a) as being unpatentable over the Golding reference and US Patent No. 5,403,639 (the Belsan reference).

Claims 16 and 38 depend from claim 9 and 33, respectively. In contrast to the Examiner's assertion, for the reasons set forth above for claims 9 and 33, Applicants assert that the Golding reference does not teach all other limitations of claims 9 and 33. Therefore, Applicants assert that the combination of the Golding reference and Belsan reference does not make obvious claims 16 and 38.

E. Claim 18

Claim 18 was rejected under 35 USC 103(a) as being unpatentable over the Thatte reference and Golding reference.

Claim 18 depends from claim 17. In contrast to the Examiner's assertion, for the reasons set forth above for claim 17, Applicants assert that the Thatte reference does not teach all other limitation of claim 17. Therefore, Applicants assert that the combination of the Thatte reference and Golding reference does not make obvious claim 18.

F. Claim 19

Claim 19 was rejected under 35 USC 103(a) as being unpatentable over the Thatte reference and Golding reference.

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Claim 19 ultimately depends from claim 17. In contrast to the Examiner's assertion, for the reasons set forth above for claim 17, Applicants assert that the Thatte reference does not teach all other limitation of claim 17. Therefore, Applicants assert that the combination of the Thatte reference and Golding reference does not make obvious claim 19.

G. Claim 24

Claim 24 was rejected under 35 USC 103(a) as being unpatentable over the Golding reference and US Patent 5,819,020 (the Beeler reference).

Claim 24 ultimately depends from claim 21. In contrast to the Examiner's assertion, for the reasons set forth above for claim 21, Applicants assert that the Golding reference does not teach all other limitations of claim 21. Therefore, Applicants assert that the combination of the Golding reference and Beeler reference does not make obvious claim 24.

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IV. Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 249212024500. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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